

GEOG205 Winter 2021:

Cartography & Geomatics



Lectures Mon / Wed 11.30 **online/recorded/ppt**

Roger Wheate ***wheate@unbc.ca*** **(8-307)**

Course notes: **<http://gis.unbc.ca>**

Student majors in GEOG205, Winter 2021

9 Forest ecology & management

5 Wildlife and Fisheries

4 Computer Science

4 Planning

4 Environmental Studies / Science / Engineering

3 Psychology

2 Geography

1 each: Anthropology, History/Poly Sci, Physics

Global/Int studies, Anthropology, General Arts

Why are you taking it: Required, or elective course ?

- Useful skill, love maps, course reputation, other ?



Matt McLean · 2nd

Senior Lab Instructor for GIS @UNBC,

Matt.McLean@unbc.ca

GEOG 205 Labs – also via Teams

Wednesday 08.30-11.20 (9)

Software: ArcGIS Pro (Esri) by connection to our 'Osmotar' server

Check Matt's message to prepare ahead for this week's lab – see especially downloading VPN



José Aragón-Osejo

University of Northern British Columbia
PhD Candidate

aragon@unbc.ca

Wednesday 14.30-17.20 (13)

Friday 08.30-11.20 (13)

Why is it 'Cartography and Geomatics' ?

Cartography

"The art, science and technology of making maps"

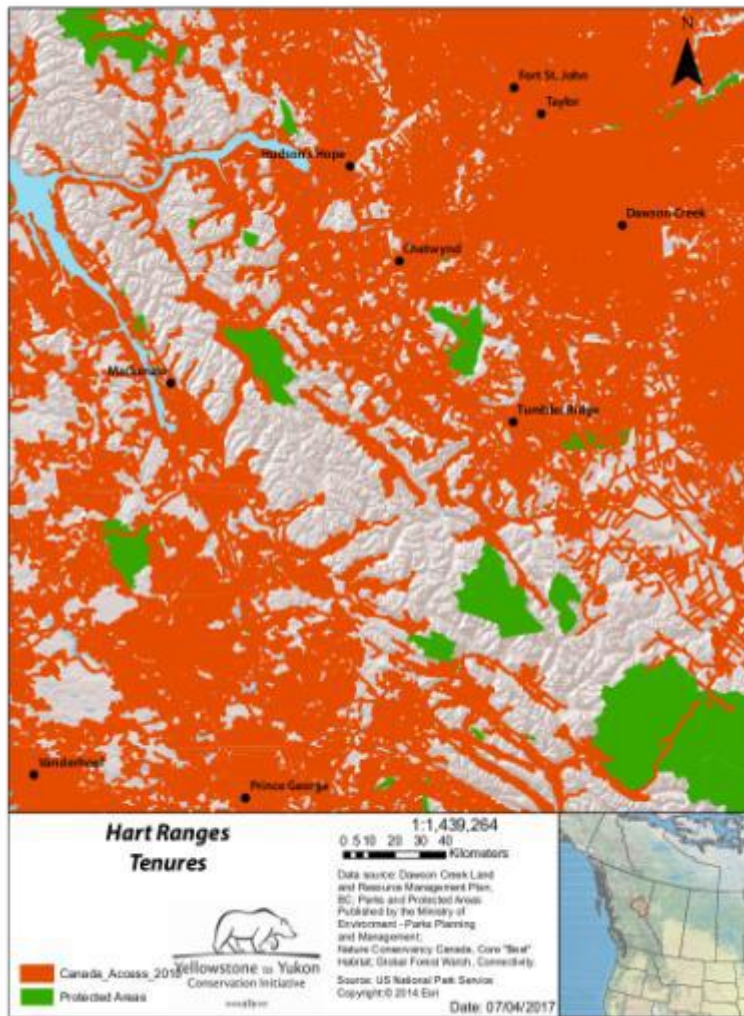
Canada: Canadian Cartographic Association (CCA) 1975

Geomatics (geomatique)

"An umbrella term for the mapping technologies"

"the discipline of gathering, storing, processing, displaying **geographic** information"
(geographic = has a spatial location)

Canadian Institute of Geomatics (1992). [Can. Inst of Surveying and Mapping 1882]



- GIS analysis of linear disturbance
- GPS agriculture (precision farming)
- Digital extraction of new cutblocks from remote sensing

Geomatics

"an umbrella term for the mapping technologies"

Cartography: art, science and technology of making maps

Geographic Information Systems (GIS)

"The management, analysis, input and output of spatial data"

Remote sensing (satellite and aerial imagery)

"Acquisition of planetary information from a distance"

Global Positioning Systems (GPS)

"determination of ground locations using measurements from satellites"

Surveying and Photogrammetry

"derivation of 2D or 3D locations from aerial photography"

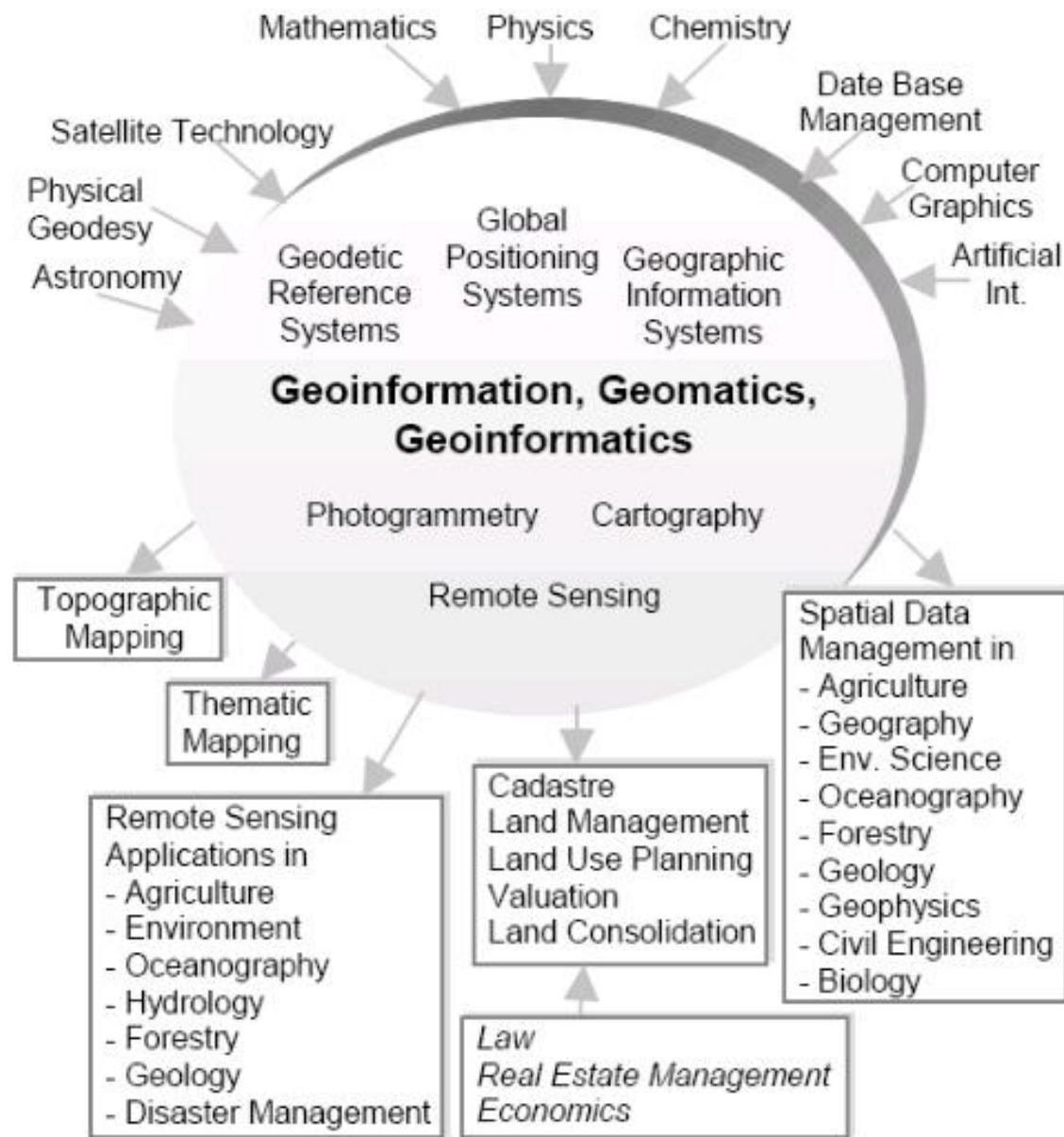


Figure 1. Geomatics (After Konecny, 2002)

GEOG205 and related ‘Geomatics’ courses

GEOG204: Focus on GIS applications - analysis

GEOG205: Focus on mapping

GEOG300: (Intermediate GIS) Focus on spatial analysis

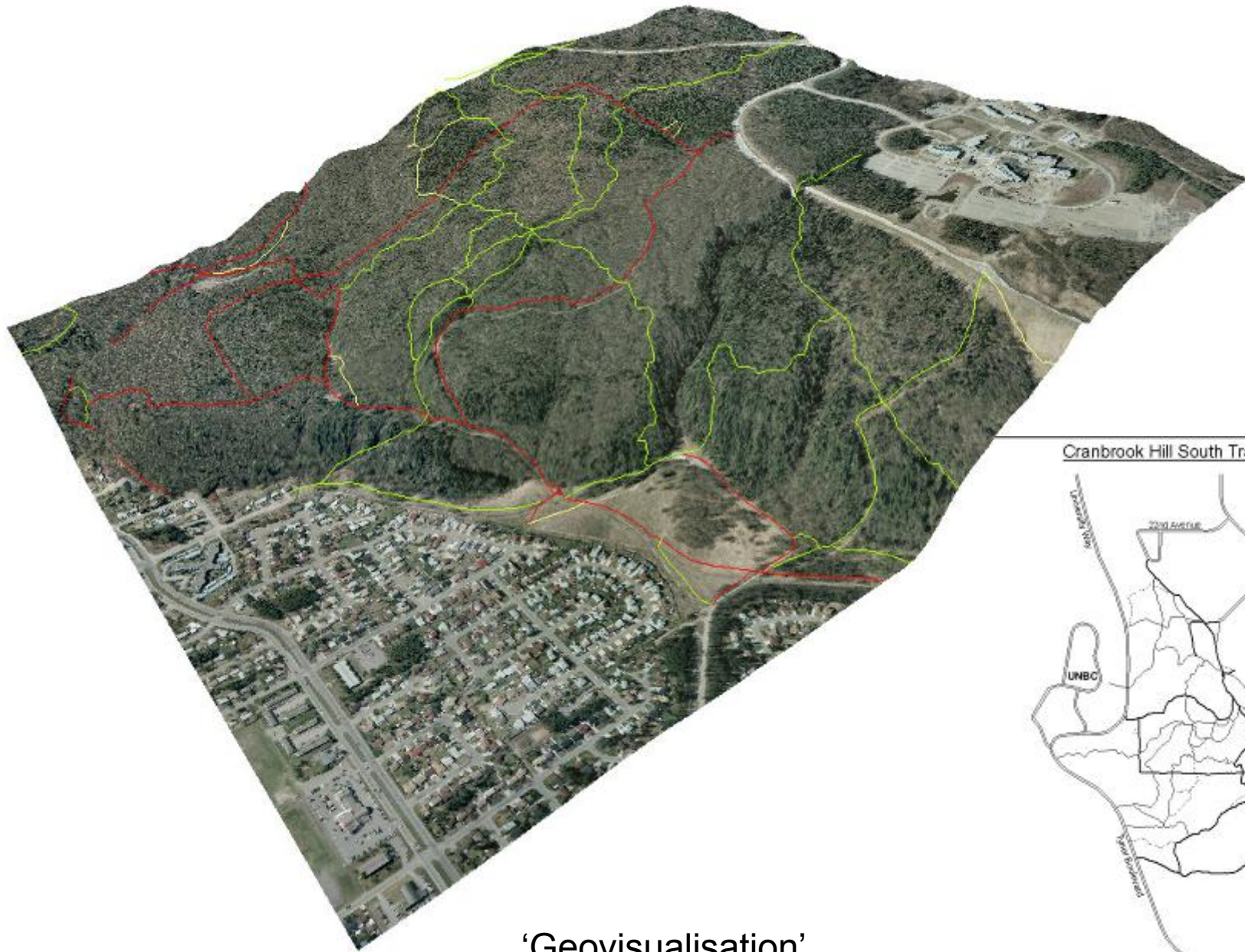
Some unavoidable overlap e.g. data input

Software

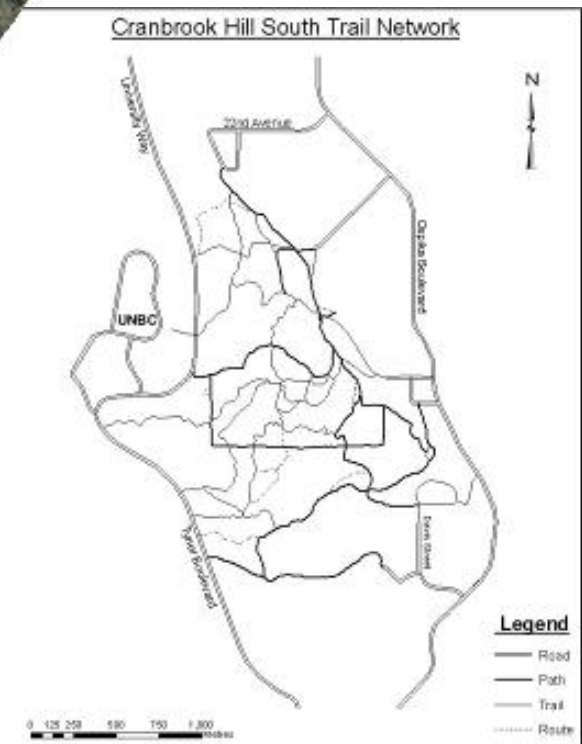
204: QGIS (Quantum) – freely downloadable

205 / 300: ArcGIS Pro .. “industry standard”

400 level independent study to map trails below campus 2003 (pre Google Earth / maps)



‘Geovisualisation’



Why are Cartography and Geomatics important?

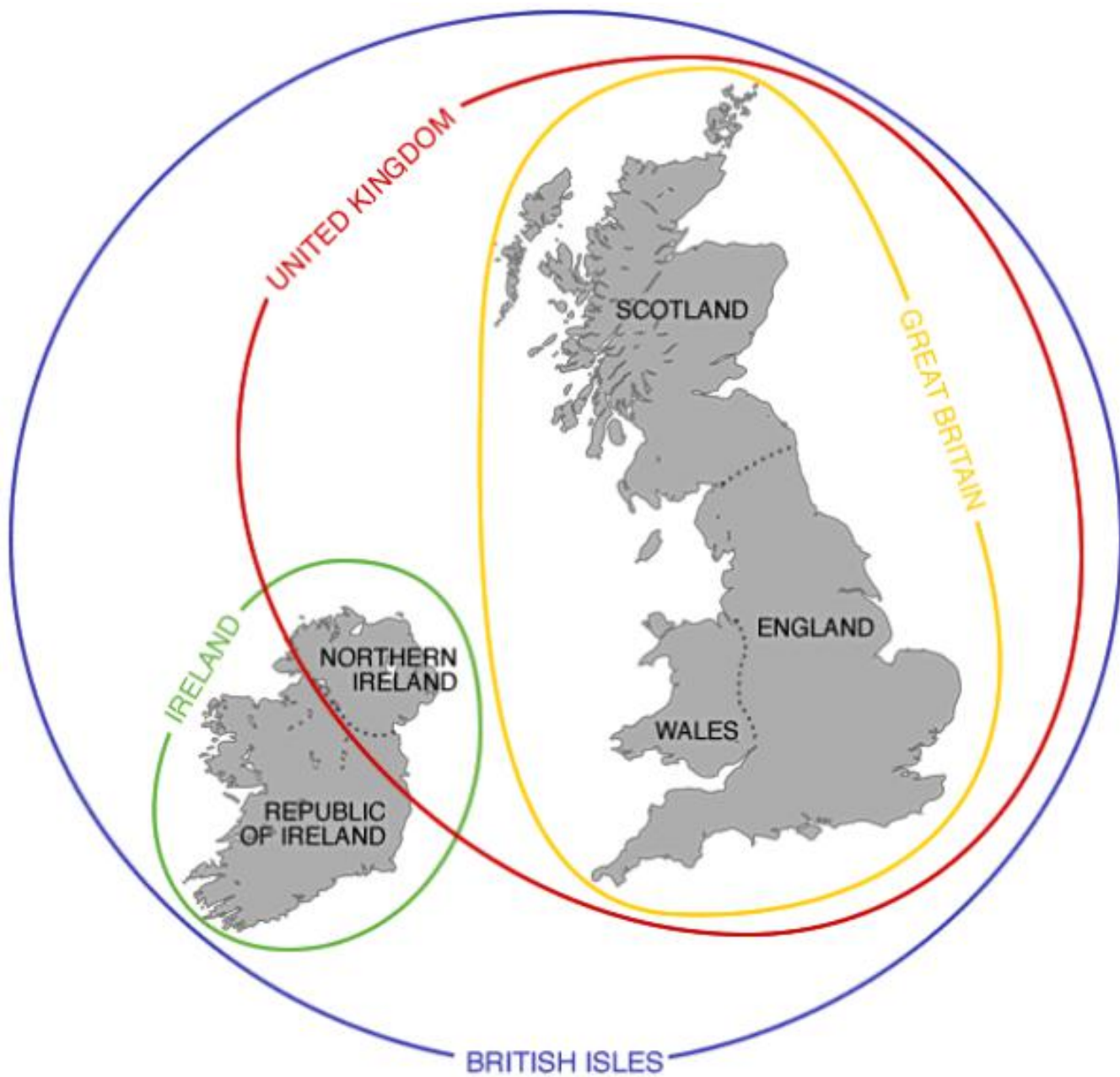
*"The **eye** will learn more in one hour from a **mappe** than the eare will learn from discourse"*

(Thomas Fuller, 1690)

'(geo)spatial data' display:
a picture says 1000 words

Some educators believe that

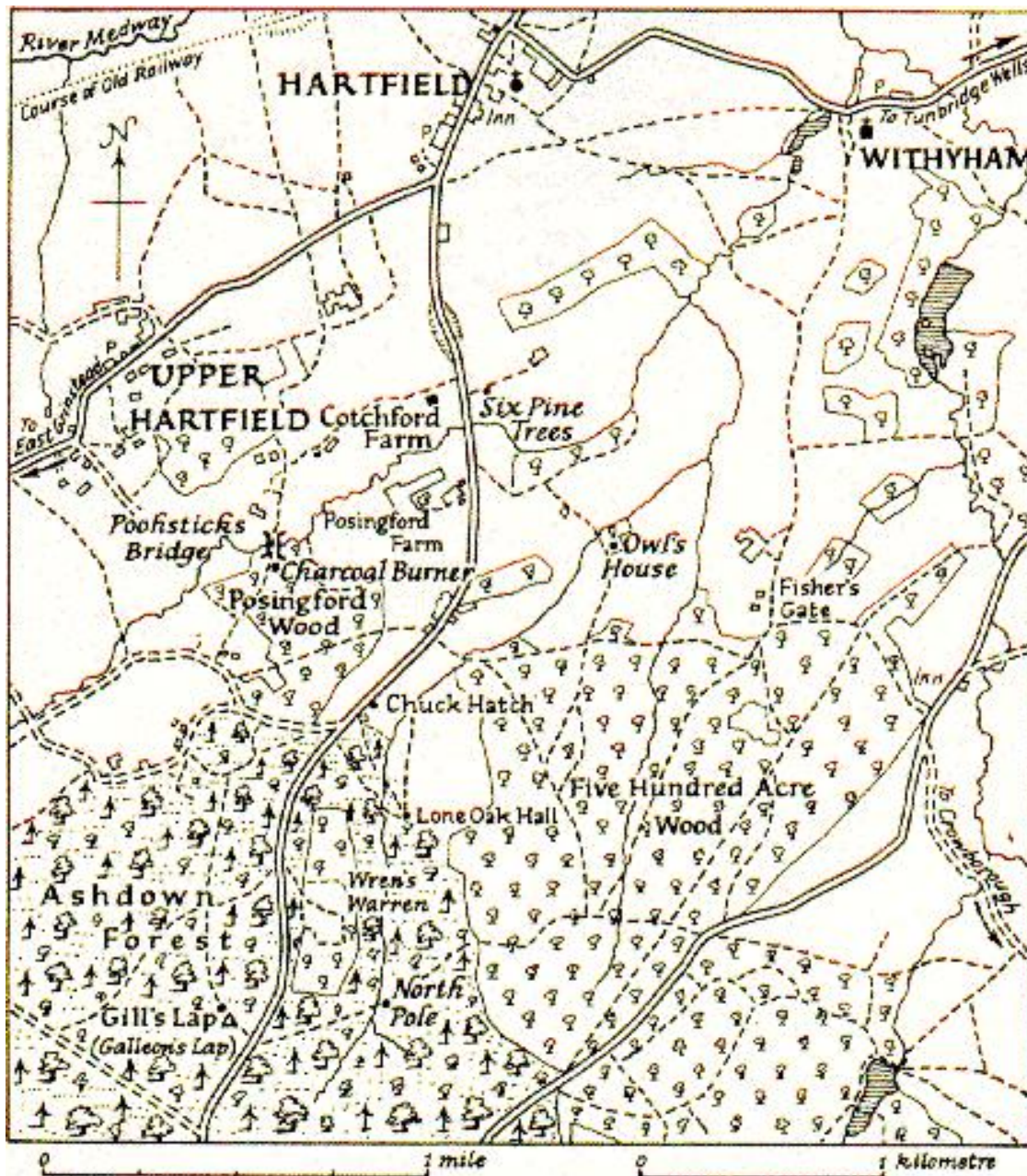
.... *'gRaphicacy' should be the 4th 'R'*



A bit about me ... my most important early map



Maps are
portals to
new worlds



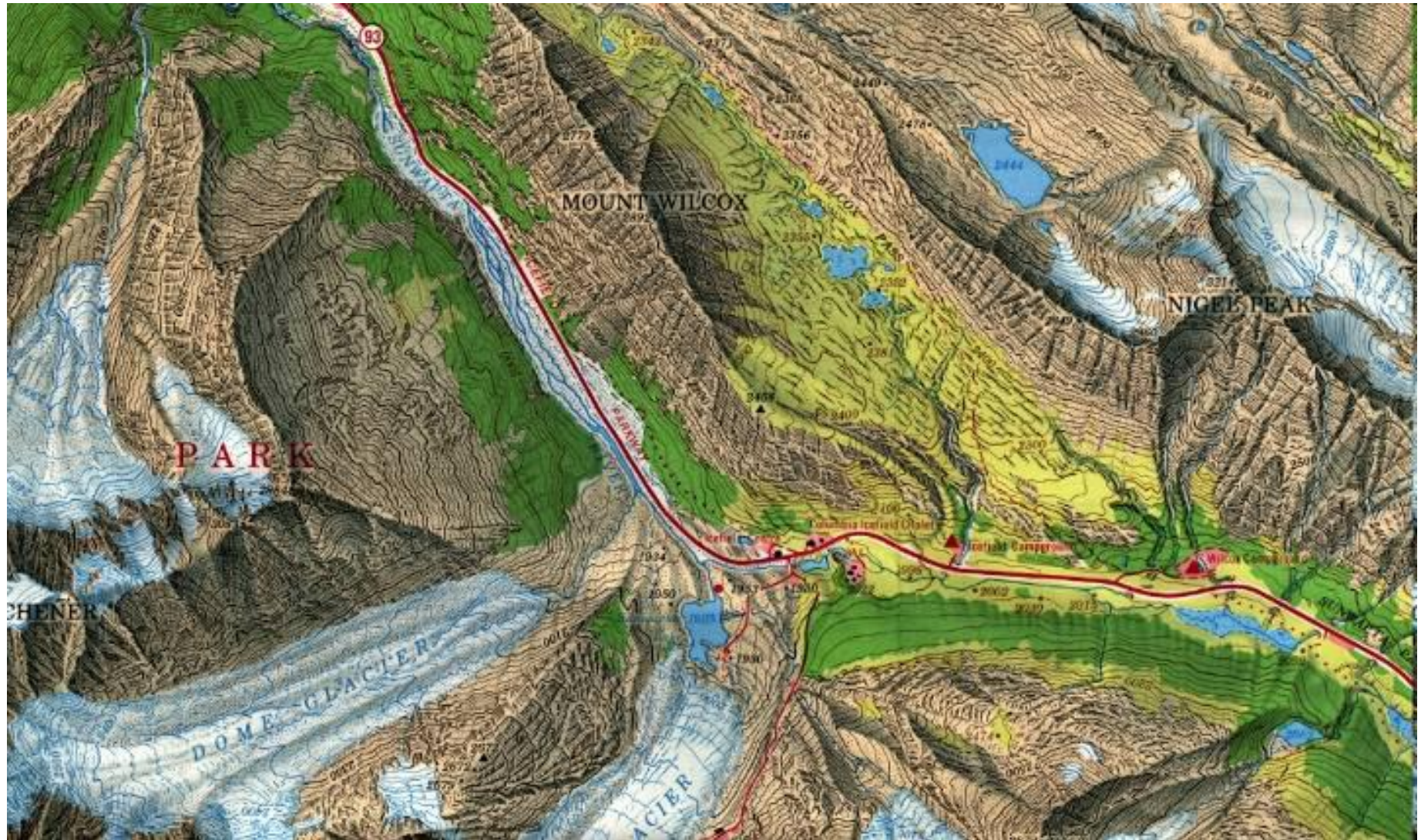
- UNESCO World Heritage Site
- Cruise Itinerary
- Land Routing
- Train Routing
- Air Routing
- Post-Program Routing



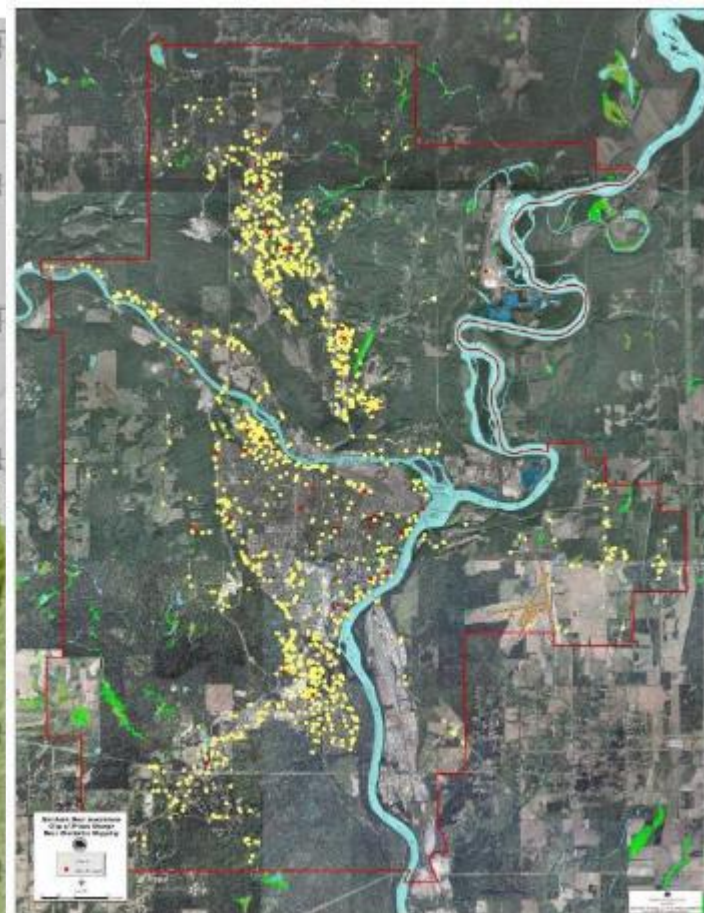


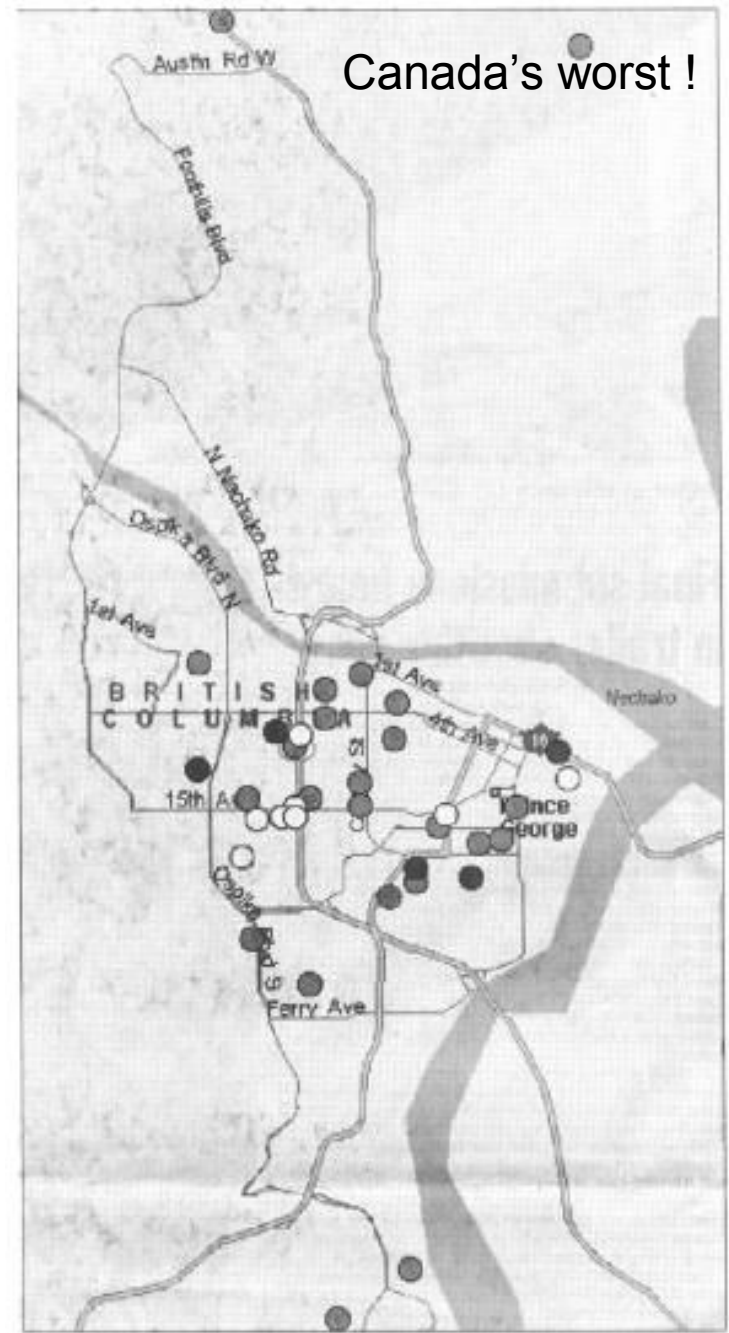
Mountain cartography [Pre-digital map]:

Canada's best !



Columbia Icefield, 1981 Athabasca Glacier / Icefields Parkway

[illegible]



This map shows the locations of recent break-ins in Prince George. Grey indicates residential break-ins; white is business and black is other. A residential break-in past the Prince George Airport is not shown.

The impact of computers, data and software:

The 'democratisation' of cartography

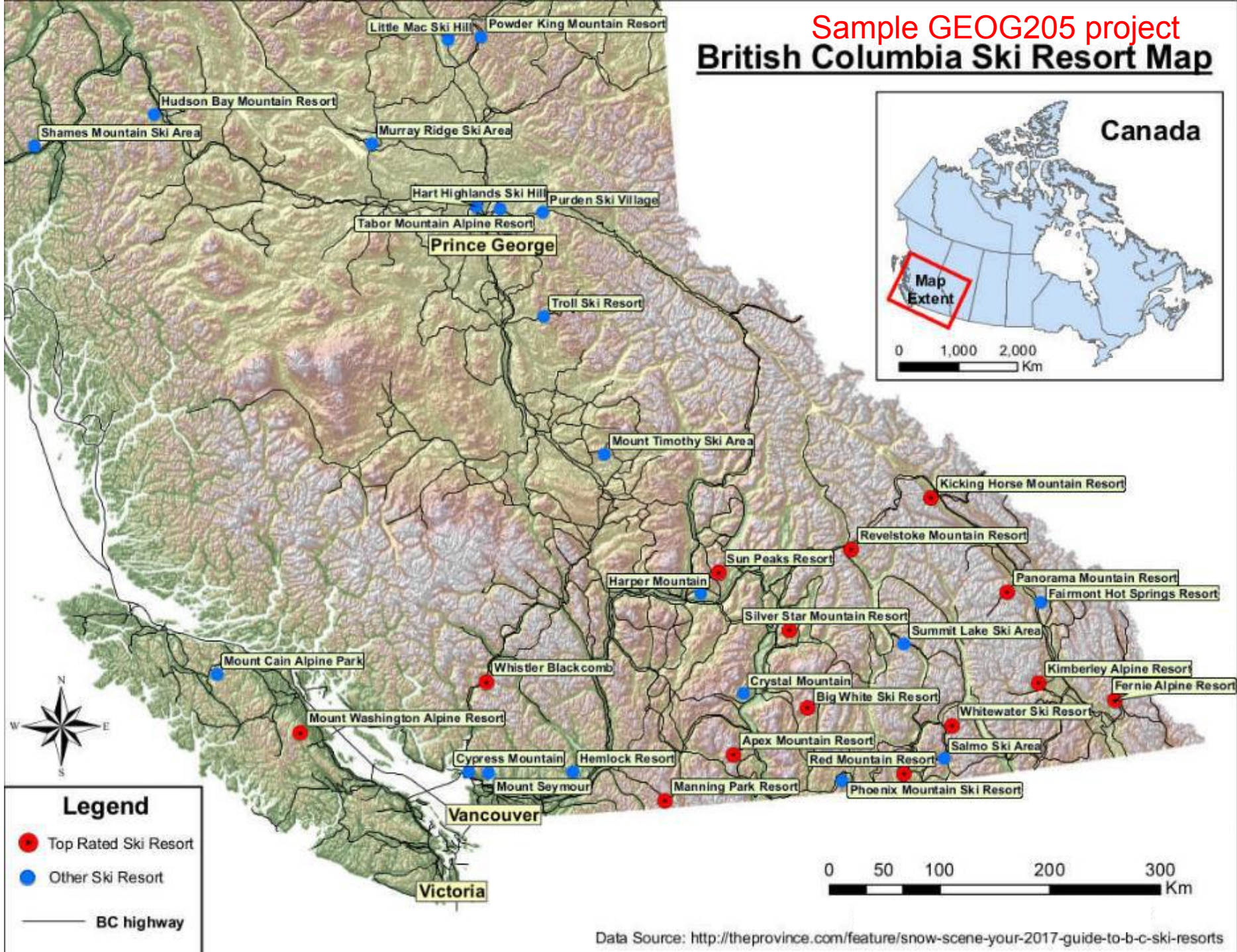
In parallel with arts and social media

= anyone can make maps - good and bad

... and also new types of maps

Sample GEOG205 project

British Columbia Ski Resort Map



New (animated) cartography:
'Geovisualisation'

'Cartography is not dead, it is reborn'



Air Traffic around the World

<http://www.youtube.com/watch?v=NNzTPfARdwQ&feature=related>

No required textbook: library books on cartography (GA105.3)

Selected online map viewer sites

World: <http://maps.google.com>

Canada: <http://atlas.nrcan.gc.ca>

iMap BC: <https://maps.gov.bc.ca/ess/hm/imap4m/>

PG map: <http://pgmappub.princegeorge.ca/Html5Viewer/?viewer=PGMapMobile>

Today's Intro class: <https://tmackinnon.com/cartography>

COURSE EVALUATION

Lab exercises - Due one week later	40%
Exams (in class <u>Feb 24</u> , April 14)	25%
Take home quiz (Jan 25, March 15)	10%
Map project (due April 20)	25%

syllabus: <http://gis.unbc.ca>